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ABSTRACT

Information is provided concerning the reading performance of North Dakota students and is reported as the percentage of correct responses for each objective. Students in grades 4, 8, and 11 in North Dakota's public and private schools were assessed. Information about basic reading objectives was collected in order to evaluate their relationship with student performance. The objectives were organized into four Domains, each encompassing clearly stated goals: (1) Word Identification and Word Recognition Skills; (2) Word and Sentence Comprehension; (3) Comprehension of Longer Discourse; and (4) Reading Study Skills. A criterion-referenced instrument (reading exercises appropriate for a grade level, and those cutting across two or more levels) was used to conduct the assessment. Findings showed general performance across the grade levels to be good, with the following areas requiring attention: practical application of syllabication, prefixes, roots and suffixes; competence in word relationships/meanings and sentence meanings; critical and judgmental reading; and using visual displays for identification of details and inferences. Also included are recommendations and use of the assessment information.
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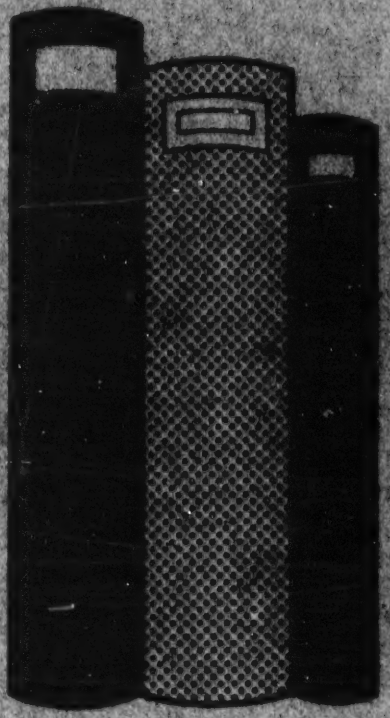

A STATEWIDE ASSESSMENT OF READING PERFORMANCE: GRADES FOUR, EIGHT AND ELEVEN

1976-77 SCHOOL YEAR

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THE OFFICE OF PLANNING AND EVALUATION
NORTH DAKOTA DEPARTMENT OF PUBLIC INSTRUCTION
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NORTH DAKOTA

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PREFACE

Much has been spoken and written in recent years about reading problems that exist in the United States. Controversies have raged since the publication of Rudolf Flesch's book, Why Johnny Can't Read, and schools have become a prime target for critics who allege that teaching methods are poor, that phonics is not being taught, or that teachers do not know how to teach reading. At issue, to be sure, has been the group of children who have gone through our schools and have not learned to read adequately.

No one seems to have a clear idea of the prevalence of reading disabilities. The late Dr. James E. Allen, U.S. Commissioner of Education, frequently estimated that 25 percent of the school age population have reading disabilities. Thus, it was the purpose of the 1976-77 assessment of reading to collect information relative to the reading performance of students enrolled in grades 4, 8 and 11 in North Dakota's public and private schools.

This publication is designed to provide information concerning the reading performance of North Dakota students and is reported as the percentage of correct responses for each objective. It would be inaccurate to conclude from this report that reading performance in North Dakota schools is unacceptable, when in fact, reading performance in North Dakota is at a very favorable level when compared to results from across the United States. However, in spite of the generally favorable performance, problems do remain.

The statewide study of reading performance could not have been completed without the assistance and cooperation of many people. First, we would like to thank the many North Dakota educators who took time to coordinate and administer the assessment instruments to students in their schools. Secondly, appreciation is also extended to the Minnesota Department of Education for making available the test items used for the reading assessment.

Appreciation is also extended to Dr. Richard Landry, Center for Teaching and Learning at the University of North Dakota, for his assistance in developing the sampling design, the data-gathering process, and computer programs for processing the data after it was collected.

We also wish to acknowledge the support provided by State Superintendent Howard J. Snortland, the assistance provided by the Right to Read Task Force of the Department of Public Instruction and Sherry Morast, who typed the major portion of the manuscript.

CHAPTER I

INTRODUCTION

Most Americans would agree that reading is one of the most essential skills children are taught in school if they are to function effectively as adults. Yet, in spite of this, it is the popular contention among employers as well as the general public that many students leave high school unable to read well enough to function in society.

The development of student competency in reading has long been a goal of all schools because the mastery of reading skills and concepts is considered a prerequisite for the attainment of other student development goals. Nevertheless, little information about student performance in relation to specific reading skills has been made available to curriculum planners at the local or state levels. Thus, it was the purpose of the North Dakota Reading Assessment to collect information about "basic" reading objectives in order to evaluate the relationship between student performance and objectives.

OBJECTIVES

The skill areas assessed were delineated by means of a goal and objectives structure for reading developed by the Minnesota Department of Education. The goals and objectives were organized into four broadly related skill DOMAINS. The four domains were ordered in such a manner as to represent a developmental hierarchy of reading skill components. The four domains are:

Domain I - Word Identification and Word Recognition Skills

Domain II - Word and Sentence Comprehension

Domain III - Comprehension of Longer Discourse

Domain IV - Reading Study Skills

Each of the four domains encompasses a clearly stated goal deemed basic to success in reading.

Under each domain and goal are OBJECTIVES (characterized by the capital letters A, B, C, or D) and SUBOBJECTIVES (characterized by numbers one through six). The overall pattern of DOMAINS, GOALS, OBJECTIVES and SUB-OBJECTIVES was structured to be developmental in nature and ordered from basic, initial reading skills to the more complex higher order skills of judgment and comprehension. The domains, goals, objectives and subobjectives were adopted from the Minnesota Statewide Education Assessment Program: Reading Performance in Minnesota and are listed as follows:

STATEMENTS OF READING GOALS AND OBJECTIVES

DOMAIN I: WORD IDENTIFICATION AND WORD RECOGNITION SKILLS
GOAL I: Students should develop competency in word identification and word recognition skills.

Objective A - Students will be able to demonstrate their knowledge of the basic classes of sound-symbol correspondence.

Subobjective 1
Students will identify the graphemic representation for the sound of a consonant that begins a word.

Subobjective 2
Students will identify the graphemic representation for the sound of a consonant that ends a word.

Subobjective 3
Students will identify the graphemic representation of common consonant blends that begin a word.

Subobjective 4
Students will identify the graphemic representation of common consonant digraphs that begin a word.

Subobjective 5
Students will identify the graphemic representation of simple long and short vowel sounds in the context of a word.

Subobjective 6
Students will identify the graphemic representation of vowel digraph sounds in the context of a word.

Objective B - Students will be able to recognize those syllables which are blended together to constitute a polysyllabic word.

Subobjective 1
Students will identify, through blending procedures, the written equivalent of the syllables of a word which is pronounced orally.

Objective C - Students will be able to demonstrate their knowledge of syllables, prefixes and suffixes.

Subobjective 1
Students will identify the number of syllables in a written word.

Subobjective 2
Students will identify prefixes or suffixes in written words.

DOMAIN II: WORD AND SENTENCE COMPREHENSION
GOAL II: Students should develop competency in understanding basic word relationships, word meanings, and sentence meanings.

Objective A - Students will be able to use context to determine the meaning of familiar and unfamiliar words.

Subobjective 1
Students will identify the meaning for a word they have not seen before through the use of sentence context.

Subobjective 2
Students will use the surrounding context to identify a familiar word which best completes the meaning of the sentence.

Objective B - Students will be able to determine the meaning of a complex sentence.

Subobjective 1
Students will use syntactic clues to identify the correct paraphrase of a complex sentence.

Objective C - Students will be able to use paragraph context to clarify an ambiguous statement.

Subobjective 1
Students will identify which one of several possible meanings of an ambiguous statement is appropriate to a particular paragraph context.

Objective D - Students will be able to demonstrate their understanding of how words are semantically related to one another or semantically distinct from one another.

Subobjective 1
Students will identify whether two words are the same, the opposite or unrelated in meaning.

Subobjective 2
Students will identify the different uses of a word that has several meanings.

DOMAIN III: COMPREHENSION OF LONGER DISCOURSE
GOAL III: Students should develop competency in understanding the relationship among ideas contained in units of longer discourse.

Objective A - Students will be able to demonstrate their understanding of both general and specific information contained in units of longer discourse.

Subobjective 1
Students will identify the correct answer to questions asking for literal recall or recognition of specific details in the discourse.

Subobjective 2
Students will identify the topic that the discourse relates to.

Subobjective 3
Students will identify the main idea of a passage, when the main idea is literally stated or when it is implied.

Objective B - Students will be able to use textual information to draw inferences about relationships among events or ideas in a passage.

Subobjective 1
Students will identify the appropriate inference when the relevant information is contained in the passage.

Subobjective 2
Students will identify the appropriate inference when the relevant information in the passage must be supported by additional experience-dependent information.

Objective C - Students will be able to distinguish between statements of fact and statements of opinion.

Subobjective 1
Students will utilize linguistic cues to identify statements of fact supported by information in the passage.

Subobjective 2
Students will utilize linguistic cues to identify statements of opinion appropriate to the passage.

Objective D - Students will be able to separate thought and feeling when reading news accounts, editorials, advertisements and magazine articles that express a particular point of view.

Subobjective 1
Students will identify the most common forms of persuasive language frequently used in advertisements.

Subobjective 2
Students will identify bias in the writing style of new accounts, editorials or magazine articles.

Subobjective 3
Students will identify examples of word usage that cue the writer's point of view.

Subobjective 4
Students will use factual information in the passage to identify viewpoints not directly stated by a writer.

DOMAIN IV: READING STUDY SKILLS
GOALS IV: Students should develop competency in applying basic reading skills for purposes of study, research, information gathering, and following written directions.

Objective A - Students will be able to interpret the literal information given in sets of directions.

Subobjective 1
Students will determine whether or not specific sets of directions have been accurately completed.

Subobjective 2
Students will use information given in a set of directions to answer specific questions of detail and sequence.

Objective B - Students will be able to utilize information presented in common visual displays: maps, charts, graphs, tables and legends.

Subobjective 1
Students will utilize the unique format characteristics of various visual displays to answer specific questions of detail.

Subobjective 2
Students will utilize the unique format characteristics of various visual displays to answer questions requiring inference.

Subobjective 3
Students will utilize the unique format characteristics of various visual displays to make judgments about alternative interpretations of the information presented in the displays.

Objective C - Students will be able to utilize information presented in basic reference materials: dictionaries, encyclopedias, textbooks, library catalogs.

Subobjective 1
Students will identify correct alphabetical sequences of words or phrases.

Subobjective 2
Students will identify where a stimulus word would be found in relation to a set of guide words.

Subobjective 3
Students will identify the likely sources to consult in order to locate specific information.

Subobjective 4
Students will identify and interpret the information presented on library catalog cards.

PROCEDURES

Part of the rationale for conducting the reading assessment was to determine pupil performance in relation to a common set of objectives. Since the standardized diagnostic reading tests do not yield enough information about pupil mastery of specific skills and concepts for curriculum planners to use in reviewing or developing programs, it was decided that the use of the criterion-referenced instrument developed by the Minnesota Department of Education would be appropriate.

Individual reading assessment exercises were created to measure achievement on particular subobjectives within objective, goal and domain areas. Two types of exercises were used:

(a) Those which were appropriate for a particular grade level and

(b) Those which cut across two or more grade levels

The above considerations for developing exercises resulted in instruments which reflected tasks appropriate for a given grade level as well as cross-grade comparisons on a specific subset of exercises.

In addition to the items generated specifically for the Minnesota Assessment in Reading, items were also selected from those made available by the National Assessment of Educational Progress (NAEP) in their report 02-R-20 Released Exercises 1970-71 Reading Assessment. The inclusion of the NAEP exercises enabled a comparison to be made of North Dakota student performance with the performance of national and regional groups as measured by the NAEP program.

The schools in the state were grouped according to the number of students enrolled in grades 4, 8 and 11 from which a stratified random sample was drawn. A total of 4,317 students were tested with 1,457 at grade 4; 1,459 at grade 8; and 1,401 at grade 11.

The test instruments were administered during December, 1976, by the staff of each school selected to participate in the assessment study. Since the tests were designed as "power tests" (tests which measure a level of performance with no time limit imposed), it was recommended that the tests be administered during regular class periods.

The report which follows contains a summary of student performance by grade, by domain and by objectives. The success level indicates the percent of correct responses for each objective and subobjective. This level is the number of correct responses for exercises related to each subobjective, divided by the total number of possible correct responses, multiplied by one hundred. Relative to the mastery of objectives, it should be noted that criterion-referenced instruments are intended to determine the student performance. Conversely, standardized norm-referenced tests are intended to determine the abilities of students by comparing them with other groups of

students. Thus, these results cannot be combined into a single performance score as in the case of norm-referenced test results.

The final chapters contain a comparison of student performance across-grade levels, a comparison of North Dakota student performance with national and regional performance, the findings, recommendations and procedures for the use of assessment results.

CHAPTER II

READING PERFORMANCE - GRADE 4

A. Across Domain Results

Domain I of the goals and objectives consists of exercises designed to assess skill in basic decoding and word identification tasks. Domain II consists of exercises designed to assess comprehension at the word and sentence level. Domain III consists of exercises to assess the comprehension of longer discourse. Domain IV consists of exercises to assess ability in the application of basic reading skills. The overall results for grade 4 are summarized in Table 1.4.

TABLE 1.4
Fourth Grade Student Performance by Domain

SOURCE	SUCCESS LEVEL
Domain I Word Identification and Word Recognition Skills	77%
Domain II Word and Sentence Comprehension	75%
Domain III Comprehension of Longer Discourse	70%
Domain IV Reading Study Skills	65%
TOTAL TEST	72%

In general, grade 4 students in North Dakota did better on Domain I and Domain II exercises than they did on Domain III and Domain IV exercises. The performance on exercises dealing with basic decoding and word identification tasks and those dealing with comprehension at the word and sentence level were above the average success level for the total test (72 percent).

The differences are not surprising since the domains are of sequentially increasing difficulty. However, the question remains as to whether an average success level of 72 percent is above, below or at expectation and whether the average success level by domain is really high enough to be satisfactory.

B. Domain I Results

Domain I of the goals and objectives consists of exercises designed to assess skills in basic decoding and word identification tasks. The skill areas measured in Domain I at grade 4 are: IA1, initial consonants; IA2, final consonants; IA3, initial consonant blends; IA5, simple vowels; IA6, vowel digraphs and dipthongs; IB1, identification and blending of syllable units forming words; IC1, enumeration of syllables in words; and IC2, identification of prefixes and suffixes. The results are displayed in Table 2.4.

TABLE 2.4
Fourth Grade Student Performance on
Word Identification and Word Recognition Skills

DOMAIN I	SUCCESS LEVEL
Objective A Sound-Symbol Relationships	85%
Subobj. 1 Initial Consonants	88%
Subobj. 2 Final Consonants	82%
Subobj. 3 Initial Consonant Blends	92%
Subobj. 5 Simple Vowels	85%
Subobj. 6 Vowel Digraphs	80%
Objective B Polysyllabic Words	69%
Subobj. 1 Identification and Blending of Syllables	69%
Objective C Syllables, Prefixes and Suffixes	60%
Subobj. 1 Enumeration of Syllables	69%
Subobj. 2 Identification of Prefixes or Suffixes	51%
DOMAIN I TOTAL Word Identification and Word Recognition Skills	77%

As noted previously, Domain I is the area in which students scored the highest. Within the domain, grade 4 students had a more accurate knowledge of consonant sound-symbol relationships than they did of vowel sound-symbol relationships (87 percent versus 82 percent). Furthermore, students performed better on tests of sound-symbol relationships (Objective A) than they did on tasks which required the application of sound-symbol knowledge (Objectives B and C). The average success level for the five sound-symbol tasks was 85 percent, whereas for the application tasks it was 63 percent: a difference of 22 percent. The result is not surprising, but the magnitude of the difference is. One would certainly expect students to perform better on those skills which they had been taught earliest and which they have been using the longest. The lowest level (51 percent) was the identification of prefixes and suffixes, a skill that may not have been emphasized too strongly in some schools at this level.

It appears that the fourth graders have a basic mastery of the components of the word attack skills at the knowledge level but have not learned to integrate them into a strategy at the application level.

C. Domain II Results

Exercises in Domain II assessed student comprehension at the word and sentence level. They are distinguished from the exercises in Domain III which assessed comprehension of longer discourse, such as paragraphs and longer passages. At the fourth grade level, five subobjectives from Domain II were assessed: IIA1, identifying the meaning of unfamiliar words in context; IIA2, identifying a familiar word which fits a context sentence; IIB1, identifying a syntactic paraphrase of a sentence; IID1, identifying the relationship between a pair of words; and IID2, identifying a word whose multiple meanings fit several context sentences. The results for Domain II, word and sentence comprehension, are summarized in Table 3.4.

The easiest of the five subobjectives was IIA2, identifying the meaning of unfamiliar words in context, with an average success level of 85 percent, followed by IID1 at 83 percent, IID2 at 75 percent, IIB1 at 73 percent. The least successful performance by 12 percent was on Subobjective IIA1, identifying the meaning of unfamiliar words in context, with an average success level of 61 percent. The average success level for all Domain II items at grade 4 was 75 percent, compared with the overall success level of 72 percent.

TABLE 3.4
Fourth Grade Student Performance on
Word and Sentence Comprehension Skills

DOMAIN II	SUCCESS LEVEL
Objective A Meaning of Familiar and Unfamiliar Words	73%
Subobj. 1 Meaning of Unfamiliar Words	61%
Subobj. 2 Meaning of Familiar Words	85%
Objective B Meaning of Complex Sentences	73%
Subobj. 1 Use of Syntax Clues	73%
Objective D Multiple Meanings and Relationships of Words	79%
Subobj. 1 Relationships Among Words	83%
Subobj. 2 Multiple Meanings of Words	75%
DOMAIN II TOTAL Word and Sentence Comprehension Skills	75%

The students did best in those tasks (IIA2, IID1, IID2) which dealt with familiar words, relationships between words, and words with multiple meanings. They had more difficulty with the identification of the syntactic paraphrase of a sentence, a longer piece of text. They had the most difficulty (by 12 percent) identifying the meanings of unfamiliar words in context. These two items seemed to measure a higher level of abstraction at the comprehension level, whereas the first three could have been more at the knowledge, rote memory level.

D. Domain III Results

All the subobjectives in Domain III, the comprehension of longer discourse, share a common attribute: they were assessed by using exercises in which the student read a passage and answered questions. They represented the types of reading activities found in a wide variety of standardized tests and other instructional materials. These skills and abilities are the kinds that one would like to have students demonstrate.

Five subobjectives were assessed at grade 4: IIIA1, recognizing details; IIIA2, recognizing topics; IIIA3, selecting a main idea; IIIB1, answering passage-related inferences; and IIIB2, answering experience-related inferences.

TABLE 4.4
Fourth Grade Student Comprehension of Longer Discourse

DOMAIN III	SUCCESS LEVEL
Objective A Recognize General and Specific Details From Discourse	69%
Subobj. 1 Recognize Details	78%
Subobj. 2 Identify Topics	59%
Subobj. 3 Identify Main Idea	69%
Objective B Use Textual Information to Draw Inferences	73%
Subobj. 1 Select Passage-Related Inferences	76%
Subobj. 2 Select Experience-Related Inferences	70%
DOMAIN III TOTAL Comprehension of Longer Discourse	70%

Overall performance for fourth grade students in Domain III (70 percent) was just slightly lower than the overall success level of the total test and somewhat lower than that observed in Domains I and II. With the exception of Subobjective IIIA2, with an average success level of 59 percent (10 percent less than each of the others), there was a fair degree of consistency among the scores across subobjectives with a range of 78 percent to 69 percent.

Caution is necessary in inferring that IIIA2 is a more difficult task than the others because there were only three items used to measure performance on that subobjective and this fact may have had a limiting effect on IIIA2.

Excluding IIIA2, it is interesting to note that student performance on inference items IIIB1 and IIIB2 (73 percent) proved to be slightly lower than on detail items (78 percent) and higher than on items used to assess the ability to identify the main idea (69 percent). One is inclined to regard the relative ease with which these students succeeded on IIIA1 as a function of practice. Factual detail items tend to predominate in reading instruction as opposed to inferential type items. However, the relatively lower performance on main idea (IIIA3) items runs counter to this argument. This type of activity is also pervasive in reading programs and one would be inclined to predict that main idea exercises should fare better than inference items which they did not. Practice, however, may be only one factor:

> However, one must temper the practice effect argument by a recognition of the fact that some tasks are inherently more difficult than others, especially at certain stages of intellectual development. IIIA3 (Main Idea) items require that the student recognize the fact that some statements are of a more general nature than others. Further they require that the student recognize certain details in a passage as examples of the more general statement, i.e. that details support main ideas. In short, main ideas are usually abstractions based upon relationships stated in the discourse and illustrated by specific facts or details.
>
> On the other hand, inference questions may or may not require such an integration of the information given in the passage. Instead, the answer to a question of inference may be keyed by a single word or phrase in the passage or simply by a student's prior knowledge of the relevant content. For example, given a passage describing a boy who was crying, including a statement that his dog had died, the inference question, "Why was the boy crying?" may not require much of an abstraction. Rather, the answer to that question probably stems from a relatively concrete experience base. In this sense, inference questions are more like detail questions. Hence, the relatively higher success levels exhibited for (IIIB1, Inference) items when compared to the more common (IIIA3, Main Idea) items may not be an unreasonable result. One would expect that, with maturity, student ability to generalize and handle abstract concepts would grow.[1]

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[1] Minnesota Statewide Educational Assessment Program: Reading Performance in Minnesota, p.20.

These factors merit some consideration in the interpretation of these results and in extrapolation beyond the present context.

E. Domain IV Results

Domain IV consists of objectives and subobjectives which assessed student ability in the application of basic reading skills to specific types of visual formats (e.g. book parts, reference materials, directions). Domain IV skills are instrumental to the ultimate goals of reading, (i.e., they represent skills that are not ends in themselves, but rather means to an end.) Hopefully by mastering such skills, the student will improve overall reading comprehension.

Six subobjectives were assessed in Domain IV at grade 4: IVA1, determining whether a set of directions has been followed; IVA2, interpreting directions by answering questions about them; IVB1, answering questions of detail about information from visual displays; IVC1, alphabetizing words; IVC2, using guide words; and IVC3, consulting references to locate specific information. At this level IVB1 and IVC3 should be interpreted with caution, since they contain too few items to allow truly accurate comparisons. The four remaining subobjectives are best viewed in terms of two groups: IVA1 and IVA2 allow for a comparison between two ways of dealing with directions. IVC1 and IVC2 allow for a comparison between knowledge of alphabetical order and its application to a practical situation. The results for Domain IV, reading study skills, are summarized in Table 5.4.

The fourth graders were much better at determining whether or not a specific set of directions had been carried out (IVA1-75 percent) than they were at answering questions about a set of directions (IVA2-34 percent). The difference can in part be explained by the relative familiarity of the students with those item formats. All IVA1 items represent tasks typical of workbooks and other written activities included in reading curricula.

The exercises for IVA2 require the interpretation of a typical cookbook recipe which may be a relatively novel situation for students and may be beyond their levels of sophistication.

TABLE 5.4
Fourth Grade Reading Study Skills Performance

DOMAIN IV	SUCCESS LEVEL
Objective A Interpret Information Given in Directions	55%
Subobj. 1 Determine Whether Directions Have Been Followed	75%
Subobj. 2 Interpret Sets of Directions	34%
Objective B Use of Maps, Charts, Graphs, Tables and Legends	74%
*Subobj. 2 Use Visual Displays to Answer Inference Questions	74%
Objective C Use of Reference Materials	68%
Subobj. 1 Identify Alphabetical Sequence	86%
Subobj. 2 Use Guide Words	63%
*Subobj. 3 Sources Used to Locate Specific Information	55%
DOMAIN IV TOTAL Reading Study Skills	65%

*Because of too few items, these subobjectives should be interpreted with caution.

For Subobjective IVC1, the fourth grade students were able to determine alphabetical order (86 percent) better than they could apply the same ordering principal to a practical situation involving the appropriate use of guide words (IVC2-63 percent). The difference is not surprising since the application task is more complicated than the more basic task of alphabetizing. The IVC2 task closely approximates what one does when using a dictionary. The low score (63 percent) leads one toward the conclusion that many fourth graders have a great deal of difficulty when trying to locate an entry word in a dictionary.

CHAPTER III

READING PERFORMANCE - GRADE 8

A. Across Domain Results

Domain I of the goals and objectives consists of exercises designed to assess skill in basic decoding and word identification tasks. Domain Il consists of exercises designed to assess comprehension at the word and sentence level. Domain III consists of exercises to assess the comprehension of longer discourse. Domain IV consists of exercises to assess ability in the application of basic reading skills. The overall results for grade 8 are summarized in Table 6.8.

TABLE 6.8
Eighth Grade Student Performance by Domain

SOURCE	SUCCESS LEVEL
Domain I Word Identification and Word Recognition Skills	85%
Domain II Word and Sentence Comprehension	73%
Domain III Comprehension of Longer Discourse	70%
Domain IV Reading Study Skills	73%
TOTAL TEST	75%

Overall, the grade 8 students did much better on the Domain I goals and objectives than they did on the other three domains. The success level on exercises dealing with basic decoding and word identification skills was at the 85 percent level. The other three domains were below the average success

level of the total test which was 75 percent. The order of the differences is not surprising since the exercises are hierarchical. However, the size of differences (12 percent for I and II, 15 percent for I and III, and 12 percent for I and IV) is large. The students appeared to have a good mastery of decoding and word identification skills, but showed large discrepancies in the application of these skills in different contexts.

Again, as with the grade 4 results, the question remains as to whether the 75 percent overall success level is above, below or at expectation and whether the success levels by domains are really satisfactory, especially in Domain II (73 percent), III (70 percent), and IV (73 percent).

B. Domain I Results

Domain I of the goals and objectives for reading consists of exercises designed to assess skill in basic decoding and word identification tasks. The skill areas measured in Domain I at grade 8 were: IA1, initial consonants; IA2, final consonants; IA3, initial consonant blends; IA4, consonant digraphs; IA5, simple vowels; IA6, vowel digraphs; IB1, identification and blending of syllables to form words; IC1, enumeration of syllables in words; and IC2, identification of prefixes and suffixes. The results for Domain I, word identification and word recognition skills, are summarized in Table 7.8.

The single reading subskill for which the highest success level was obtained was that of recognizing and identifying initial consonant blends, IA3, with a performance level of 97 percent. This result was followed by a score of 93 percent for IA1, initial consonant sounds, and of 90 percent for IA2, final consonants.

As with grade 4, performance on the five sound-symbol correspondence subtests (Objective A) was higher (90 percent) than performance levels on those subtests measuring the application of this knowledge to words (Objectives B and C - 82 percent). For grade 8, the margin of difference

(8 percent) is less than it proved to be for grade 4 (22 percent) on the same skill groupings. By grade 8, students have made considerable progress in narrowing the gap between the sound-symbol component skill area and the application exercises dealing with syllabication.

TABLE 7.8
Eighth Grade Student Performance on
Word Identification and Word Recognition Skills

DOMAIN I	SUCCESS LEVEL
Objective A Sound-Symbol Relationships	90%
Subobj. 1 Initial Consonants	93%
Subobj. 2 Ending Consonants	90%
Subobj. 3 Initial Consonant Blends	97%
Subobj. 4 Consonant Digraphs	90%
Subobj. 5 Simple Vowels	90%
Subobj. 6 Vowel Digraphs	82%
Objective B Polysyllabic Words	90%
Subobj. 1 Identification and Blending of Syllables	90%
Objective C Syllables, Prefixes and Suffixes	79%
Subobj. 1 Enumeration of Syllables	79%
Subobj. 2 Identification of Prefixes and Suffixes	78%
DOMAIN I TOTAL Word Identification and Word Recognition Skills	85%

The data indicate that these basic reading skills have been mastered by a large majority (90 percent) of grade 8 students in North Dakota. In addition, the skill application areas dealing with knowledge of syllables, prefixes and suffixes showed relatively lower levels of performance (82 percent) for grade 8 just as they did at grade 4, but the level of achievement had increased for all objectives within Domain I.

C. Domain II Results

Domain II of the goals and objectives for reading consists of exercises which measured student competence in understanding basic word relationships,

word meanings and sentence meanings. Included for grade 8 are items generated for the measurement of student skills in six different areas. These areas are: IIA1, unfamiliar words in context; IIA2, familiar words in context; IIB1, use of syntax to identify sentence paraphrases; IIC1, use of paragraph context to classify ambiguous statements; IID1, meaning relationships among words; and IID2, multiple meanings of words.

TABLE 8.8
Eighth Grade Student Performance on
Word and Sentence Comprehension Skills

DOMAIN II	SUCCESS LEVEL
Objective A Meaning of Familiar and Unfamiliar Words	76%
Subobj. 1 Meaning of Unfamiliar Words	75%
Subobj. 2 Meaning of Familiar Words	76%
Objective B Meaning of Complex Sentences	77%
Subobj. 1 Use of Syntax Clues	77%
Objective C Use of Paragraph Context	49%
Subobj. 1 Use of Paragraph Context to Classify Ambiguous Statements	49%
Objective D Multiple Meanings and Relationships of Words	73%
Subobj. 1 Relationship Among Words	65%
Subobj. 2 Multiple Meanings of Words	81%
DOMAIN II TOTAL Word and Sentence Comprehension	73%

The highest scores at grade 8 were obtained for Subobjective IID2, multiple meanings of words, with a mean success level of 81 percent. Next came Subobjectives IIB1, use of syntax to identify paraphrase at 77 percent level; IIA2, familiar words in context at 76 percent level; and IIIA1, unfamiliar words in context at 75 percent level. As opposed to grade 4 students, students in grade 8 scored almost identically for familiar and unfamiliar (artificial) words from context. Students performed at the lowest

level for Subobjective IIC1, the use of paragraph context, scoring at the 49 percent level.

Within Domain II, subtests dealing with the clarification of ambiguous statements and with meaning relationships between words proved to be the most difficult areas. Students in grade 8 did better on items about multiple word meanings than they did on items for any other subobjective in Domain II.

D. Domain III Results

Domain III of the goals and objectives consists of assessment exercises which were designed to measure student competencies in reading and comprehending units of longer discourse such as paragraphs or longer passages. Assessed at grade 8 were eight distinct subobjectives within Domain III: IIIA1, recognition of specific details in the discourse; IIIA2, identification of paragraph topics; IIIA3, identification of main ideas in passages; IIIB1, passage-based inference; IIIB2, inference based on passage and experience; IIID1, identification of common forms of persuasive language; IIID2, identification of bias in writing style; and IIID3, identify word usage using the writer's point of view. The subobjectives assessed for Domain III at grade 8 represent items and tasks common to a wide variety of testing and instructional materials found in most classrooms. The results for Domain III, comprehension of longer discourse, are summarized in Table 9.8.

The performance levels for grade 8 students over Objectives A and B were relatively consistent, ranging from a high of 76 percent for IIIA1 to a low of 70 percent for IIIA3. There were no meaningful differences between the student's ability to understand both general and specific information in units of longer discourse (Objective A-74 percent) and the student's ability to use textual information to draw inferences from a passage (Objective B-74 percent). The subobjectives showed only slight differences with a maximum of 6 percent.

The lowest level of performance for Domain III occurred for the group of items within Objective D (53 percent) where students had the task of recognizing and comprehending a writer's point of view as contained in printed materials. Subobjective IIID3 assessed the ability of students to identify cues within written language which signal a writer's point of view with achievement at the 69 percent level. However, Subobjective IIID1, measuring the student's skill to recognize commonly used persuasive language as it appears in advertisements, and IIID2, measuring ability to recognize bias present in editorials, newspapers or magazines were attained at the 48 and 43 percent levels respectively. Students had a tendency to base responses on inappropriate information or irrelevant outside knowledge, rather than to base responses upon a careful reading and utilization of information contained in a passage.

TABLE 9.8
Eighth Grade Student Comprehension of Longer Discourse

DOMAIN III	SUCCESS LEVEL
Objective A Recognize General and Specific Details From Discourse	74%
Subobj. 1 Recognize Details	76%
Subobj. 2 Identify Topics	75%
Subobj. 3 Identify Main Ideas	70%
Objective B Use Textual Information to Draw Inferences	74%
Subobj. 1 Select Passage-Related Inferences	73%
Subobj. 2 Select Experience-Related Inferences	74%
Objective D Recognize Point of View	53%
Subobj. 1 Identify Persuasive Language	48%
Subobj. 2 Identify Bias	43%
Subobj. 3 Identify Word Usage	69%
DOMAIN III TOTAL Comprehension of Longer Discourse	70%

E. Domain IV Results

Domain IV of the goals and objectives for reading consists of items which were devised to measure pupil competence in the application of reading skills. There were seven separate subskill areas assessed at grade 8: IVA1, determining whether sets of directions have been followed correctly; IVA2, interpreting sets of directions for the purpose of answering factual questions; IVB1, interpreting visual displays to answer questions of detail; IVB2, interpreting visual displays to answer questions of inference; IVB3, interpreting visual displays for the purpose of making judgments about alternatives; IVC2, identifying stimulus word location in relation to a set of dictionary guide words; and IVC4, recognizing and interpreting information on library catalog cards.

TABLE 10.8
Eighth Grade Reading Study Skill Performance

DOMAIN IV	SUCCESS LEVEL
Objective A Interpret Information Given in Directions	73%
Subobj. 1 Determine Whether Directions Have Been Followed	84%
Subobj. 2 Interpret Sets of Directions	62%
Objective B Use of Maps, Charts, Graphs, Tables and Legends	49%
Subobj. 1 Use Visual Displays to Answer Detail Questions	69%
Subobj. 2 Use Visual Displays to Answer Inference Questions	31%
Subobj. 3 Use Visual Displays to Make Judgements	46%
Objective C Use of Reference Materials	81%
Subobj. 2 Use Guide Words	83%
Subobj. 4 Interpret Information on Library Cards	79%
DOMAIN IV TOTAL Reading Study Skills	73%

Subobjectives IVA1, IVC2 and IVC4 were attained at a relatively high level, 84 percent, 83 percent and 79 percent respectively. The students performed well in these areas. At grade eight 62 percent could interpret a set of written directions (IVA2). In the area of visual formats (Objective B), students did less well with 69 percent achieving Subobjective IVB1, 31 percent Subobjective IVB2, and 46 percent Subobjective IVB3. The students tended to have great difficulty with exercises using visual displays that demanded the use of inferences for judging alternatives.

In general, performance in the area of the application of reading skills was quite high for items dealing with following directions (73 percent-Objective A) and the use of reference sources (81 percent - Objective C) while it was considerably lower for items in which the use of visual displays (49 percent - Objective B) was of importance.

CHAPTER IV

READING PERFORMANCE - GRADE 11

A. Across Domain Results

Domain I of the goals and objectives consists of items designed to assess skill in basic decoding and word identification tasks. At grade 11, only IC1, numbers of syllables, and IC2, prefixes and suffixes, were assessed. Domain II assesses student comprehension at the word and sentence level. At grade 11, the emphasis was directed toward IIA1, unfamiliar words; IIC1, ambiguous statements; and IID2, multiple meanings. Domain III focuses on comprehension of relationships among ideas contained in units of longer discourse. Domain IV is designed to assess student ability to apply basic reading skills. The emphasis across the four assessment domains was shifted from Domains I and II at the younger age levels to Domains III and IV at grade 11. The shift is consistent with a shift in curriculum practices at the various grade levels. The results for grade 11 are presented in Table 11.11.

The overall performance for grade 11 students was 65 percent. There seemed to be very little difference among the attainment levels across the domains, ranging from 70 percent to 64 percent. Domains I and II should be interpreted cautiously since only certain objectives were tested. The success levels for Domain III, comprehension of longer discourse, and Domain IV, application of reading skills, were 64 percent and 66 percent.

The success levels, as for grades 4 and 8, should be examined to see if they are below, above, or at expectation for grade 11 students.

TABLE 11.11
Eleventh Grade Student Performance by Domain

SOURCE	SUCCESS LEVEL
*Domain I Word Identification and Word Recognition Skills	65%
*Domain II Word and Sentence Comprehension	70%
Domain III Comprehension of Longer Discourse	64%
Domain IV Reading Study Skills	66%
TOTAL TEST	65%

*These domains must be interpreted with caution, since only a limited number of objectives were measured.

B. Domain I Results

Domain I of the goals and objectives consists of exercises to assess skill in basic decoding and word identification tasks. At grade 11, the skills assessed were IC1, the ability to identify the number of syllables in words, and IC2, the ability to recognize and identify prefixes and suffixes in words. These two subobjectives were selected because they represent the application of word recognition and identification skills which characterize Domain I items.

TABLE 12.11
Eleventh Grade Student Performance on
Word Identification and Recognition Skills

DOMAIN I	SUCCESS LEVEL
Objective C Syllables, Prefixes and Suffixes	65%
Subobj. 1 Enumeration of Syllables	66%
Subobj. 2 Identification of Prefixes and Suffixes	64%
*DOMAIN I TOTAL Word Identification and Word Recognition Skills	65%

*The domain success level must be interpreted with caution, since only one objective was measured.

Grade 11 students scored at a level of 65 percent for Domain I, compared to an average of 65 percent for all four domains. Since only two subobjectives were assessed, this lower level of performance does not necessarily mean that students would score low on a larger sample of Domain I items.

The average success level for the IC1 items was 66 percent. Considering the age of the students and the basic nature of the test, performance does seem lower than one would expect. The relatively low level of performance may indicate that school programs do not require students to develop a highly sophisticated level of knowledge concerning syllabication.

The average difficulty level for the exercises measuring the ability to identify prefixes and suffixes (IC2) was 64 percent, a score which may seem low for eleventh graders on this rather basic task. Perhaps these results suggest there is a need for some developmental and remedial work in the area of structural analysis at the secondary level.

C. Domain II Results

The exercises in Domain II assessed student comprehension at the word and sentence levels and were specifically concerned at grade 11 with: IIA1, identifying the meaning of unfamiliar words in context; IIC1, identifying which one of several possible meanings of an ambiguous statement is appropriate to a particular context; and IID2, identifying the different uses of a word that has several meanings. The results for Domain II, word and sentence comprehension, are summarized in Table 13.11.

Exercises for IIA1 were designed to measure the skill of recognizing the meanings of unfamiliar words appearing in contextual units. The student's task was to read the text containing the unfamiliar, artificial word and then select a contextually appropriate definition. The average success for these exercises for grade 11 was the highest within the objectives measured for this domain (79 percent).

TABLE 13.11
Eleventh Grade Student Performance on
Word and Sentence Comprehension Skills

DOMAIN II	SUCCESS LEVEL
Objective A Meaning of Familiar and Unfamiliar Words	79%
Subobj. 1 Meaning of Unfamiliar Words	79%
Objective C Use of Paragraph Context	62%
Subobj. 1 Use of Paragraph Context to Classify Ambiguous Statements	62%
Objective D Multiple Meanings and Relationships of Words	65%
Subobj. 2 Multiple Meaning of Words	65%
*DOMAIN II TOTAL Word and Sentence Comprehension	70%

*The domain success level must be interpreted with caution, since only a limited number of subobjectives were measured.

Subobjective IIC1 items were designed to measure student skills in recognizing and identifying the most appropriate meaning for an ambiguous statement in terms of the accompanying text. The student's task was to read an ambiguous headline and an accompanying explanatory article and then to identify the most appropriate paraphrase of the ambiguous headline consistent with information in the article. The average success level (62 percent) was the lowest of the three subobjectives in Domain II. This task was not easy and students may have been unfamiliar with it. This may suggest that students need more practice on tasks similar to those assessed.

Exercises for Subobjective IID1 were designed to measure student skills in identifying and recognizing the multiple meanings of words. The task was to select one word from among four choices which would correctly complete the meaning of three separate sentences presented. The success level was 65 percent. Again, this task appeared unfamiliar and it would seem

appropriate to give students more practice on tasks which require greater attention to multiple meanings.

D. Domain III Results

Exercises within Domain III assessed student comprehension of relationships among ideas contained in units of longer discourse, with emphasis on the understanding of paragraphs and articles. Eleven subobjectives from Domain III were tested at grade 11 and were grouped by objective into four broader skill groups. These groupings were: Objective A, literal comprehension; Objective B inferential comprehension; Objective C, fact versus opinion comprehension; and Objective D, recognition of point of view or bias. The results for Domain III, comprehension of longer discourse, are summarized in Table 14.11.

Within the grouping under Objective A were the subobjectives: IIIA1, the recognition of specific literal details in the discourse, was attained at the 75 percent level; IIIA2, the recognition of discourse topics, was attained at the 86 percent level; and IIIA3, the recognition and identification of main ideas, was attained at the 62 percent level. Although the eleventh graders performed very well on IIIA2, they performed less well on IIIA1 and seemed to have greater difficulty in differentiating a main idea from specific ideas in a passage (IIIA3).

Within the grouping under Objective B were two subobjectives: IIIB1, skills of inference when the necessary information was contained within the passage (70 percent); and IIIB2, skills of inference when information is drawn from passage and outside experience (60 percent). In general, the contrast was between passage-dependent and passage-plus-experience-dependent inferences. The average success level was 65 percent with a difference of 10 percent in favor of Subobjective IIIB1, selecting passage-related inferences.

TABLE 14.11
Eleventh Grade Student Comprehension of Longer Discourse

DOMAIN III	SUCCESS LEVEL
Objective A Recognize General and Specific Details From Discourse	74%
Subobj. 1 Recognize Details	75%
Subobj. 2 Identify Topics	86%
Subobj. 3 Identify Main Ideas	62%
Objective B Use Textual Information to Draw Inferences	65%
Subobj. 1 Select Passage-Related Inferences	70%
Subobj. 2 Select Experience-Related Inferences	60%
Objective C Distinguish Between Fact and Opinion	58%
Subobj. 1 Identify Statements of Fact	61%
Subobj. 2 Identify Statements of Opinion	55%
Objective D Recognize Point of View	56%
Subobj. 1 Identify Persuasive Language	62%
Subobj. 2 Identify Bias	51%
Subobj. 3 Identify Word Usage	69%
Subobj. 4 Identify Indirectly Stated Viewpoints	41%
DOMAIN III TOTAL Comprehension of Longer Discourse	64%

Within the grouping under Objective C were two subobjectives: IIIC1, use of linguistic cues to identify statements of fact supported by information in the passage (61 percent); and IIIC2, the use of linguistic cues to identify statements of opinion appropriate to the passage (55 percent). The overall success level for this area was 58 percent which seems relatively low. Both subobjectives indicate that students had a difficult time in using linguistic cues to identify statements of fact and/or opinion.

Within the grouping under Objective D were four separate subobjectives: IIID1, identify common forms of persuasive language (62 percent); IIID2, identify bias in writing style of articles, news accounts, and editorials (51 percent); IIID3, identify word usage indicating the writer's point of

view (69 percent); and IIID4, the use of passage facts to identify indirectly stated points of view (41 percent). The general performance of IIID exercises was quite low, in fact it was the lowest performance found on any subtest within this domain. It should be noted that subtest IIID is a difficult task and one that requires a high level of complex thinking.

It would seem that students need more extensive instruction and practice on tasks similar to those in Domain III which demand more complex levels of interpretive and inferential reading skills.

E. Domain IV Results

Domain IV was designed at grade 11 to assess student ability in applying basic skills for purposes of study, research, information gathering and following written directions. Two general skill areas were assessed: IVA, following and interpreting various kinds of written directions, and IVB, interpreting visual displays such as maps, graphs and charts. The results for Domain IV, reading study skill performance, are summarized in Table 15.11.

Objective A in Domain IV represents items from two subobjectives: IVA1, identifying whether written directions have been correctly followed, and IVA2, interpreting sets of written directions to answer specific questions of detail. Subobjective IVA1 was attained at the 65 percent level and Subobjective IVA2 was attained at the 71 percent level. Grade 11 students seemed to have more difficulty in the identification process as opposed to the interpretation process relating to written directions.

Objective B in Domain IV represents exercises from three separate subobjectives: IVB1, interpretation of visual displays to answer questions of detail; IVB2, the interpretation of visual displays; and IVB3, making judgments concerning alternative interpretation of information contained in common visual displays. The overall success level for task IVB1 (86 percent) was considered quite high. Apparently most students were quite knowledgeable

in the performance of the IVB1 skill, which was to answer questions on a computer style report card. The overall success level for IVB2 (56 percent) was considered to be quite low. The task was to answer questions based on a road map. It would appear that many students were unfamiliar with map reading. Subtest IVB3 was intended to assess student abilities to utilize the unique format characteristics of visual displays and to make judgments about alternative interpretations. Students were asked to interpret a chart representing the number of vehicle miles traveled in a 24 hour period. The average success level was 62 percent.

Table 15.11
Eleventh Grade Reading Study Skill Performance

DOMAIN IV	SUCCESS LEVEL
Objective A Interpret Information Given in Directions	68%
Subobj. 1 Determine Whether Directions Have Been Followed	65%
Subobj. 2 Interpret Sets of Directions	71%
Objective B Use of Maps, Charts, Graphs, Tables and Legends	71%
Subobj. 1 Use Visual Displays to Answer Detail Questions	86%
Subobj. 2 Use Visual Displays to Answer Inference Questions	56%
Subobj. 3 Use Visual Displays to Make Judgments	62%
DOMAIN IV TOTAL Reading Study Skills	66%

It would seem appropriate from the results in Domain IV to suggest that more instructional emphasis be placed on reading and interpreting visual displays such as maps, charts and graphs. The mean performance level for Domain IV was 66 percent.

CHAPTER V

ACROSS-GRADE-LEVELS AND NAEP COMPARISONS

This chapter is divided into two parts. The first part treats the across-grade-levels comparisons and the second part compares North Dakota student performance with National Assessment of Educational Progress (NAEP) results.

Part I: Across-Grade-Levels Comparisons

In this section, performance is compared across grades 4, 8 and 11 for the purpose of tracing developmental trends. The identical exercises which appeared at all three grade levels were used for these comparisons. There are three separate across-grade-level comparisons: by domain, by objective and by subobjective (Tables 16 through 18). The reader is reminded that the data used in this chapter are cross-sectional (i.e., gathered on students at different age levels during one time period), rather than longitudinal (i.e., collected on one sample of students over three time periods).

Since there are only 14 items which cut across all three grade levels, the reader should exercise some caution in interpreting these comparisons. The overlap comparison by domain is presented in Table 16.

The differences on item totals between grade 8 and 11 were 9 percent and between grade 4 and 8 were 19 percent. In Domain I, the differences were slight, possibly because of a ceiling effect (i.e., fourth graders scored quite high on items in this domain). For most other domains, objectives and subobjectives, the growth was greater between grades 4 and 8 than between grades 8 and 11. In some instances the ceiling effect as well

as the termination of developmental reading programs by the end of the eighth grade may have influenced results.

TABLE 16
Comparison of Student Performance for Overlap Exercises by Domain: Grades 4, 8 and 11

	Domain	No. of Items	Percent Correct by Grade 4	8	11
I	Word Identification and Word Recognition Skills	1	88	91	93
II	Word and Sentence Comprehension	2	46	75	84
III	Comprehension of Longer Discourse	8	45	71	80
IV	Reading Study Skills	3	39	61	71
	TOTAL	14	52	71	80

The comparison of student performance for overlap items by objective for grades 4, 8 and 11 is presented in Table 17.

TABLE 17
Comparison of Student Performance for Overlap Items by Objective: Grades 4, 8 and 11

	Objective	No. of Items	Percent Correct by Grade 4	8	11
IC	Syllables, Prefixes and Suffixes	1	88	91	93
IIA	Familiar and Unfamiliar Words in Context	2	46	75	84
IIIA	Recognize General and Specific Detail from Discourse	6	40	68	76
IIIB	Use Textual Information to Draw Inferences	2	60	81	93
IVA	Interpret Information Given in Directions	3	39	61	71

The data presented in Table 17 indicates only minor differences in the ability of students to identify syllables, prefixes and suffixes. Student performance differences were greatest between the fourth and eighth grades. The largest differences between eighth and eleventh grade results were on exercises related to the use of textual information for drawing inferences and the interpretation of information given in directions.

The comparison of student performance for overlap exercises by sub-objectives is presented in Table 18.

TABLE 18
Comparison of Student Performance for Overlap Exercises Across Grades 4, 8 and 11

Subobjective No.	Content of Subobjective	No. of Items	Percent Correct by Grade 4	8	11
IC1	Identify the Number of Syllables in a Written Word	1	88	91	93
IIA1	Identify the Meaning of a Word in Context	2	46	75	84
IIIA1	Identify Specific Details in Discourse	3	44	72	78
IIIA2	Identify the Topic that Relates to the Discourse	1	35	59	66
IIIA3	Identify the Main Idea of Passage	2	38	67	78
IIIB1	Identify the Appropriate Inference When the Relavant Information is Contained in the Passage	1	70	87	93
IIIB2	Identify the Appropriate Inference When the Relavant Information Must be Supported by Additional Experience - Dependent Information	1	50	74	93
IVA2	Use the Information Given in a Set of Directions to Answer Specific Questions of Detail and Sequence	3	39	61	71

The information presented in Table 18 needs to be interpreted with caution as only one or two common exercises were included for each of the subobjectives. Again the differences between fourth and eighth grade student performance was larger than between eighth and eleventh grade students.

Part II: NAEP Comparisons

The results of the North Dakota sample versus the National Assessment of Educational Progress (NAEP) sample are reported in this section. The purpose was to compare the reading performance of North Dakota students at grades 4, 8 and 11 to the performance of similar students in the Nation and in the Central Region of the U.S.A. on common items. The results by grade are presented in Tables 19, 20 and 21. A summary is presented in Table 22. Significance was accepted at the 5 percent level. The comparisons of North Dakota fourth grade student performance with NAEP results are presented in Table 19.

At grade 4, there were 24 common items: 5 of which showed no significant difference between North Dakotans and the Nation and Central U.S.; 6 on which North Dakotans scored higher than the Nation only; 11 on which North Dakotans scored higher than both the Nation and Central U.S.; 1 on which North Dakotans scored lower than Central U.S. only; and 1 on which North Dakotans scored lower than both the Nation and Central U.S.

TABLE 19
Comparison of North Dakota Fourth Grade
Student Performance with NAEP Results

Objective	Item Content	NAEP	Percent Correct Nation	Central	N.D.
IIIA Recognize General and Specific Detail from Discourse	"Farmer Brown"	61201	26.9	30.8	38.8**
	"Mr. Popper"	50101	56.8	59.6	67.0**
	"Painted Easter Eggs"	60401	26.0	28.4	39.5**
	"Helen Keller"	50301	54.8	56.6	58.8
	"Poison Ivy"	50601	41.0	43.5	40.3
	"Poison Ivy"	50603	21.3	21.2	33.4**
	"Storm Story"	61901	74.9	79.4	72.0a
IIIB Use Textual Information to Draw Inferences	"Mr. Popper"	70301	67.4	74.0	82.3**
	"Mr. Popper"	70302	62.5	70.3	76.5**
	"Wind Story"	80101	72.5	73.5	82.1**
	"Wind Story"	80801	49.5	55.7	55.7*
	"Christmas Story"	72601	66.9	69.2	71.9*
	"Christmas Story"	73201	60.4	61.8	63.4
	"Storm Story"	52001	85.7	87.8	87.4
	"Storm Story"	70401	83.4	88.2	92.3*
	"Skiing"	71101	32.4	33.5	50.4**
	"Amos the Ant"	72401	75.2	82.1	87.6**
IVA Interpret Information Given	"English Muffins"	30701	36.2	40.4	45.1**
IVB Use of Maps, Charts, Graphs and Tables to Answer Questions	"Dog Food"	20901	67.4	68.0	74.0**
	"Bicycle Signs"	20501	68.8	72.2	76.3*
IVC Use of Reference Materials	"Mr. Jones"	41101	62.5	66.6	68.7*
	"All About Elephants"	40901	73.3	72.5	69.4
	"Windmills"	40801	57.4	62.1	64.7*
	"Eskimos"	40601	48.4	51.3	42.1b

* indicates N.D. significantly higher than Nation
** indicates N.D. significantly higher than Central and Nation
"a" indicates N.D. significantly lower than Central
"b" indicates N.D. significantly lower than Central and Nation

The comparisons of North Dakota eighth grade student performance with national and regional results are presented in Table 20.

TABLE 20
Comparison of North Dakota Eighth Grade
Student Performance with NAEP Results

Objective	Item Content	NAEP	Percent Correct Nation	Central	N.D.
IIIA Recognize General and Specific Detail from Discourse	"Helen Keller"	50301	82.6	85.4	77.4b
	"Farmer Brown"	61201	75.1	79.8	77.9*
	"Sports Car"	50201	69.0	68.9	81.2**
	"Painted Easter Eggs"	60401	53.7	57.1	58.8*
	"Poison Ivy"	50601	77.2	81.8	60.4b
	"Poison Ivy"	50603	65.0	66.9	79.2**
IIIB Use Textual Information to Draw Inferences	"Polar Ice Cap"	74601	55.3	57.5	63.1**
	"Skiing"	71101	77.4	78.4	74.2a
	"Skiing"	83501	54.5	56.5	44.8b
	"Skiing"	74401	35.1	39.9	40.3*
IIID Recognize the Author's Point of View	"Flies"	84101	74.5	75.2	73.1
IV Interpret Information Given in Directions	"English Muffins"	30901	21.9	22.2	27.1**
	"English Muffins"	30801	66.1	68.7	74.1**
	"English Muffins"	30701	66.2	68.5	83.2**
IVB Use of Maps, Charts, Graphs, Tables and Legends to Answer Questions	"Report Card"	22701	52.8	56.4	56.1*
	"Report Card"	22801	83.3	87.0	81.8a
	"Table of Contents"	42001	26.3	28.7	30.6*
	"Fatal Accidents"	21901	53.5	57.6	61.6**
	"Fatal Accidents"	22001	16.7	17.1	30.7**

* indicates N.D. significantly higher than Nation
** indicates N.D. significantly higher than Central and Nation
"a" indicates N.D. significantly lower than Central
"b" indicates N.D. significantly lower than Central and Nation

There were 19 common items at grade 8: there was no significant difference between North Dakotans and the Nation and Central U.S. on 1 item; 5 on which North Dakotans scored higher than the Nation only; 8 on which North Dakotans scored higher than both the Nation and Central U.S.; 2 on which North Dakotans scored lower than Central U.S. only; and 3 on which North Dakotans scored lower than both the Nation and Central U.S.

The comparisons of North Dakota eleventh grade student performance with NAEP results are presented in Table 21.

TABLE 21
Comparisons of North Dakota Eleventh Grade
Student Performance with NAEP Results

Objective	Item Content	NAEP	Percent Correct Nation	Central	N.D.
IIIA Recognize General and Specific Details from Discourse	"Helen Keller"	75701	94.0	95.3	94.0
	"Helen Keller"	50301	82.0	85.9	85.7*
	"Farmer Brown"	61201	90.7	92.4	93.4*
	"Sports Car"	61501	98.7	99.4	96.9
	"Sports Car"	50201	89.0	92.3	94.6*
	"Beat Generation"	62201	26.7	26.3	43.0**
	"Beat Generation"	52401	63.5	64.4	70.0**
	"Painted Easter Eggs"	60401	63.9	70.3	66.2a
	"Poison Ivy"	50601	84.7	85.9	66.4b
	"Poison Ivy"	50603	76.3	77.9	82.4**
IIIB Use Textual Information to Draw Inferences	"Skiing"	71101	90.6	91.6	93.2
	"Skiing"	83501	77.5	82.2	63.7b
	"Skiing"	74401	50.2	50.7	53.2*
	"Polar Ice Cap"	74601	82.5	87.7	74.8b
	"Beat Generation"	73501	67.3	70.5	66.0a
	"Shakespeare"	83201	51.5	56.5	42.0b
	"Shakespeare"	74701	51.9	54.2	44.6b
IIID Recognize the Author's Point of View	"Flies"	84101	75.8	77.3	79.6*
IVA Interpret Information Given in Directions	"English Muffins"	30901	37.9	41.1	48.2**
	"English Muffins"	30801	74.6	74.5	85.2**
	"English Muffins"	30701	64.6	67.3	92.6**
IVB Use of Maps, Charts, Graphs, Tables and Legends to Answer Questions	"Report Card"	22701	80.0	84.9	77.9a
	"Report Card"	22801	90.5	93.3	93.0
	"Table of Contents"	42001	61.7	65.4	45.3b
	"Fatal Accidents"	21901	73.7	80.0	80.7*
	"Fatal Accidents"	22001	34.9	37.4	42.9**

* indicates N.D. significantly higher than Nation
** indicates N.D. significantly higher than Central and Nation
"a" indicates N.D. significantly lower than Central
"b" indicates N.D. significantly lower than Central and Nation

At grade 11 there were 26 common items: 4 on which the difference between North Dakotans and the Nation and Central U.S. were not significant; 6 on which North Dakotans scored higher than the Nation only; 7 on which North Dakotans scored higher than both the Nation and Central U.S.; 3 on which North Dakotans scored lower than Central U.S. only; and 6 on which North Dakotans scored lower than both the Nation and Central U.S.

A summary of the significant differences between the comparisons of the NAEP results with North Dakota results is presented in Table 22.

TABLE 22
Summary of Significance for NAEP and North Dakota Comparisons for Grades 4, 8 and 11

	Grades			
Legend	4	8	11	Total
No Difference	5	1	4	10
* N.D. more than Nation only	6	5	6	17
** N.D. more than Nation and Central	11	8	7	26
"a" N.D. less than Central only	1	2	3	6
"b" N.D. less than Nation and Central	1	3	6	10
TOTAL	24	19	26	69

There was a total of 69 items on which across-grade comparisons with NAEP results were made. No significant differences were found between North Dakotans and the Nation and Central U.S. on 10 items. North Dakotans performed significantly better than the Nation only on 17 items. There were 26 items on which North Dakotans performed significantly better than the Nation and Central U.S. North Dakotans scored significantly lower on 6 items than Central U.S. and lower on 10 items than the Nation and Central U.S.

CHAPTER VI

FINDINGS, RECOMMENDATIONS AND USE OF ASSESSMENT INFORMATION

While the general performance of the students in grades 4, 8 and 11 was good, some areas of concern emerged from an analysis of the student results. Hopefully, the analysis presented will stimulate discussion of the implications for instruction and result in the selection and use of methods and materials appropriate for addressing weaknesses identified through the assessment.

The following areas should receive the attention of North Dakota educators:

A. Students at all grade levels assessed appeared to have mastered the basic reading skills, but need more practice in applying the concepts of syllabication, prefixes, roots and suffixes in all content areas and to real world reading tasks.

B. In the area of word and sentence comprehension, students at all grade levels assessed need to develop competence in understanding basic word relationships, word meanings, and sentence meanings.

C. The higher level comprehension skills which involved critical and judgmental reading need more attention at grades 8 and 11. The tasks using content to determine the meaning of ambiguous statements, the identification of author bias and point of view, the identification of propaganda techniques, and the use of persuasive language are all areas of concern that need to be addressed.

D. Students at all grade levels assessed had more difficulty using visual displays to identify details and inferences than they did in using a written passage for the same purposes. Thus, it seems that all students can benefit from instruction in the use and interpretation of familiar visual displays such as maps, charts, computer report forms, and graphs.

A more specific listing of concerns and recommendations for remediation by grade level and domain are contained in the following section.

Fourth Grade

Domain I

Fourth graders have been taught and have mastered the basic reading skills, but experienced difficulty in applying those skills in content areas outside of reading classes.

Reading should be used as a communication tool in all content areas. This may require more sophisticated training of teachers to teach reading in the content areas.

Domain II

Students responded to rote memory type exercises at the knowledge level with a higher degree of proficiency than they did to the more abstract exercises at the comprehension level.

Since the identification of word meaning from content is one of the word attack skills, it would seem that greater emphasis should be placed on the development of this skill.

Domain III

Since the emphasis on factual details is more common than on drawing inferences in reading instruction, students seem to be less able to integrate textual material with their experiential backgrounds when drawing conclusions.

Reading programs should employ diagnostic techniques thereby placing more emphasis on matching reading materials and teaching methods with student needs.

Domain IV

Students demonstrated an ability to perform workbook type tasks, but they were less able to interpret instructions and apply alphabetizing concepts in less familiar situations.

Opportunities should be provided which enable students to interpret instructions and apply alphabetizing concepts in more practical settings.

In summary, it is suggested that diagnostic techniques be used in all reading programs thereby placing more emphasis on matching reading materials and techniques with student needs.

Eighth Grade

Domain I

Most eighth grade students appear to have mastered basic reading skills.

However, continued emphasis should be placed on developing student knowledge of syllables, prefixes and suffixes.

Domain II

Students did relatively well on words having multiple meanings but experienced some difficulty when asked to determine the meaning and relationship of words in context. The students did less well when asked to identify the meaning of an ambiguous statement which was appropriate to the paragraph context.

The implication for instruction is that procedures for the development of vocabulary skills and usage need to be reinforced and that skills and activities dealing with ambiguous statements, along with the use of context in understanding what is read, need to be emphasized.

Domain III

Students appear to have based responses on inappropriate information or irrelevant outside knowledge rather than on careful reading and utilization of information contained in a passage.

Instruction should probably place greater emphasis on questions of inference and judgment and less emphasis on tasks where the primary goal is recall of detail.

Domain IV

The students demonstrated relative effectiveness in following directions and in using reference resources. However, students scored lower in using various visual displays on exercises which required drawing inferences and making judgments.

Greater emphasis needs to be placed on more effective use of charts, graphs, maps and other forms of visual displays in the development of reading study skills in all subject areas.

Eleventh Grade

Domain I

The relatively low level of performance on exercises related to the enumeration of syllables in a word and the identification of prefixes and suffixes indicates that a number of students do not seem to have a grasp of these concepts.

Attention should be given to syllabication and word study, especially those words with Greek and Latin roots which are an important part of the English language.

Domain II

Students experienced difficulty in determining the most appropriate meaning of an ambiguous statement in context and in identifying and recognizing the multiple meanings of words.

The results suggest that students need more practice in the use of textual material to determine the meaning of ambiguous statements and some direct instruction on the multiple meanings of frequently used words.

Domain III

The tasks of identifying main ideas, bias, fact, opinion and indirectly stated viewpoints of authors caused the students some difficulty.

Students need more extensive instruction and practice on tasks, similar to those in Domain III, which demand more complex levels of interpretive and inferential reading skills.

Domain IV

Students performed well on skills requiring the use of visual displays to answer questions related to the detail presented. However, students experienced difficulty interpreting directions and in using visual displays to answer questions requiring inferences and making judgments.

The results suggest that more instructional emphasis be placed on reading and interpreting visual displays such as maps, charts and graphs within the subject areas.

The areas of concern cited above are not intended to be an exhaustive listing of concerns, but rather a guide to potential problems. It is hoped that the planning and implementation of future instructional programs, staff development activities, and teacher training programs will take these findings into consideration.

Use of Assessment Information

School district administrators whose pupils were tested have received reports of student performance on each of the objectives assessed. The information contained in this report and the school reports are appropriate for use by school district personnel for planning, developing and implementing programs for students.

The objectives used for the reading assessment were based on reading skills and concepts taught in most classrooms. A beginning point in making use of the results is to study the objectives and note the ones that are relevant to the district reading program. If the reading program objectives have not been specified, some good sources would be the objectives used for this assessment, the sets of objectives found in curriculum guides, or those found in the charts available with the reading textbook series in use by the district. The incorporation of "basic" objectives with those developed by the district can serve to provide direction for instruction and the development of some type of minimal student competency in reading.

Because of sampling procedures, the results from the statewide reading assessment do not present a complete picture of student performance for each district that participated in the study. However, by using objectives for the local reading program, information similar to that in the assessment can be developed by school districts.

Although direct statements about district level performance cannot be made from the data presented here, some general perceptions about student performance in relation to the objectives can be made. If the objectives that are included in the district reading program have been identified, school district personnel can investigate any discrepancies between expected and actual performance.

It should be noted that the results from criterion-referenced instruments have to be treated differently from those of standardized tests. The difference is due primarily to the psychometric procedures used in developing the two different types of instruments. Criterion-referenced tests are designed to determine the relationship between measurable objectives and student performance relative to mastery of these objectives, while standardized (norm-referenced) tests are intended to find out about the abilities of students by

comparing them with other students. While the results of this assessment were given in terms of the percent of correct responses, group results can be reported in terms of the percentage of pupils who mastered each objective. These results cannot be summed into a single performance score as in the case of norm-referenced test results.

As mentioned earlier, the review of student performance should include the notation of any discrepancies. For example, school district personnel have set the objective that 70 percent of the students, upon completing the fourth grade, will have developed skill in determining meanings of unfamiliar words through the use of context. If fourth grade performance on the assessment reveals that 60 percent of the students have mastered the objective, then the 10 percent discrepancy should be noted for investigation.

Before an investigation of the causative factors is begun, the assessment information should be validated. One method of validating the discrepancy is to readminister the exercises related to the objective that students were having difficulty mastering. After validation, several approaches might be taken to investigate the causative factors for the discrepancies.

A study of the instructional materials used by the school district may be initiated to determine whether the skills and concepts covered by the objectives are emphasized. If certain student population groups are showing discrepancies on a large number of reading objectives, the entire range of instructional materials might be analyzed to determine the problems with existing materials and then to identify different materials that have more relevance for pupils from various backgrounds.

The instructional techniques used in the classroom might also be investigated. If group-oriented instruction is the predominant pattern used in the school, the assessment information might indicate that many students have not had adequate time and explanation to master the ideas stated by the

objectives. Thus, organization for instruction might be changed because of information provided by the assessment.

Several other investigations can be initiated from an analysis of assessment data. For example, such possible causative factors as student motivation, teacher attitude, parental and community attitude, and other factors might be studied.

A thorough report on the usefulness of the information from the study and the adoption of assessment concepts by a school district would be quite lengthy. However, school district personnel may contact the Department of Public Instruction for assistance in the use of Reading Assessment results at the local level.